HEADQUARTERS IOWA WING, CAP
UNITED STATES AIR FORCE AUXILIARY
P. O. Box 909
Bettendorf, IOWA 52722-0909

COMMUNICATIONS PLAN 100-1

1 FEB 2002

OPERATIONS AND TRAINING PLAN

1. PURPOSE. To provide an organized, efficient and reliable operation and training communications networks for all units which will support the missions of the Iowa Wing.

2. SCOPE. This plan establishes the framework for the communications network in the Iowa Wing. The communications network is to be used for normal administrative and operational communications and for training and practice of personnel in communications skills.

3. NETWORK ORGANIZATION: Communications networks will be established and maintained as follows:

a. Wing HF Net: Wing NCS, All Wing Headquarters Stations & All Wing Stations.
b. Squadron Nets (squadrons may combine nets): Squadron/Area NCS & All Squadron Stations.
c. Digital Network: Wing Packet Bulletin Board, Squadron/Area Packet Bulletin Boards, Wing/Squadron Packet Nodes and Digipeaters, & All Wing and Squadron Packet Stations.

4. NETWORK FUNCTIONS. Communications networks listed above will provide a communications capability to all units of the Iowa Wing. They will be used daily in support of routine administrative and operational matters conducted by Wing Headquarters and units. In addition, they will be used on a regular basis for communications training and testing.

5. PLAN REQUIREMENTS. Units below the Wing level may publish further direction to implement this plan in an optional Unit Operating Instruction (OI). Unit OI's will contain a description of how unit assets are used in operations and training and contain instructions for safely operating radio equipment. One copy of a unit's OI and all subsequent changes will be forwarded to the Iowa Wing Headquarters Wing Director of Communications upon publication.

6. NET CONTROL STATION CAPABILITIES. All Wing & Unit primary and alternate net control stations will maintain an operational capability for the nets they control and on all authorized frequencies for that net's function. HF net control stations must maintain a minimum frequency coverage in the 4 MHz band and are encouraged to maintain frequency coverage for all CAP HF frequencies below 25 MHz.

7. FREQUENCY MANAGEMENT. CAP use of dual frequency assignments and the limited number of frequencies available require all CAP units to participate in frequency management plans which implement such techniques as time, frequency and mode limitations on the Iowa Wing's use of CAP authorized frequencies. Units will use frequencies other than long range HF (4 to 25 MHz) as their primary means of local communications whenever possible. Participation in limited nets and on designated frequencies may be restricted to CAP stations having a primary need (e.g. Commander's Net) or having the expert capability to interface with other elements of the CAP Communications Network (e.g. Packet/Digital restrictions on 7 MHz). The use of time or frequency diverse relay stations is encouraged. Refer to CAPR 100-1, Vol I, for the time-phased conversion to newer technical standards. Units and persons buying new HF or FM radios are required to buy radios that meet the new technical standards or a callsign will not be issued. .

8. FREQUENCY PRIORITY. Mission (formerly called REDCAP) communications have priority for communication on CAP frequencies.

9. INTER-REGION TRAFFIC. The National Emergency and Calling Frequency 4582.0 kHz is authorized for contacting other region's stations.

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10. FREQUENCIES AND EMISSIONS AUTHORIZED (All members Iowa Wing):

FREQUENCY	EMMISSION	POWER OUT (WATTS)	
		WING	SQUADRONS
2374.0 kHz	SSB	400	150
4506.0 kHz	SSB	1600	400
4509.0 kHz[1]	SSB/DIGITAL	1600	400
4582.0 kHz	SSB	1600	400
7635.0 kHz	SSB	1600	400
26.62 MHz	AM	5	5
26.62 MHz	SSB/ DIGITAL	150	150
26.617 MHz	SSB	150	150
143.75 MHz[2,3]	FM	50	50
143.90 MHz[2,3]	FM	50	50
148.125 MHz[2]	FM	50	50
148.1375 MHz[2]	FM	50	50
148.150 MHZ[2]	FM	50	50
149.5375 MHz[5]	A/A, A/G FM	10 AIR/50 GND	10 AIR/50 GND
149.895 MHz[4]	FM DIGITAL	50	50

NOTES: 1. This frequency is authorized as the alternate NCR net voice frequency for training, tests, emergencies and is shared as the NCR Packet frequency for Bulletin Boards and Gateway stations.

2. All VHF-FM frequencies provide excellent, relatively interference free and reliable communications for short distance and line of sight communications. Units are encouraged to use these frequencies to the maximum extent possible. All VHF-FM non-Digital frequencies are authorized for voice simplex operation provided there are no repeaters within 50 miles and the operator assures himself that such operation will not activate a repeater.

3. These frequencies are authorized for repeater inputs. They should not be used locally as simplex frequencies unless the user is 50 miles or more from a repeater. Users will insure that there are no repeater subaudible tones being transmitted if using this frequency as an alternate simplex frequency.

4. Not authorized for voice operations, digital transmissions only. Authorization to use certain other VHF FM frequencies for additional on-the-air control of FM repeaters exist but require HQ CAP authorization to use.

5. Transmitting from aircraft in-flight on FM frequencies will normally use air to ground simplex frequency of 149.5375 (CH4) for communications with ground stations. If CH4 is not usable, the second and third choices are CH 2 and CH3 simplex frequencies in that order. Due to interference, the last choice is a repeater frequency when simplex frequencies are not viable. Airborne use of 100.0 Hz tone on repeater input frequencies is prohibited. Single Frame Video (SFV) signals should use FM frequencies authorized for digital modes but avoid repeater input frequencies when possible.

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Iowa Wing VHF FM Repeaters and Subaudible Tones

Location	Frequency Pair	Standard Subaudible	Discrete Subaudible
Burlington	143.90/148.15 MHz	100.0 Hz	156.7 Hz
Davenport	143.90/148.15 MHz	100.0 Hz	186.2 Hz
Des Moines	143.90/148.15 MHz	100.0 Hz	127.3 Hz
Cedar Rapids	143.90/148.15 MHz	100.0 Hz	151.4 Hz
Waterloo	143.90/148.15 MHz	100.0 Hz	173.8 Hz
Dubuque	143.90/148.15 MHz	100.0 Hz	127.3 Hz

11. FREQUENCY UTILIZATION. Operations on CAP authorized frequencies outside scheduled net times will be conducted on a first come, non-interference basis. Corporate FM radios must and personal radios should conform to the following Standard Iowa Wing channelization plan and the technical requirements in IAWG COMMPLAN 100-5.

WING FM RADIO CHANNELIZATION PLAN FOR CORPORATE MOBILES AND HT's & PERSONAL HT'S FM RADIOS: FOR ALL CORPORATE FM MOBILE RADIOS, A LAMINATED COPY OF THIS TABLE (without the first column), OR EQUIVALENT, MUST BE PROMINENTLY DISPLAYED IN THE VEHICLE/AIRCRAFT OR TIED TO THE CORPORATE RADIO'S MICROPHONE CORD:

NAT, PERSONAL & CORP HT's	CORP MOBILE CH #	XMIT FREQ	RECV FREQ	USE	ENCODE TONE	DECODE TONE
1 *	1	148.1500	148.1500	GND TO GND	100.0 HZ	NONE
2 *	2	148.1250	148.1250	GND TO GND	100.0 HZ	NONE
3 *	3	148.1375	148.1375	GND TO GND	100.0 HZ	NONE
4 *	4	149.5375	149.5375	AIR-GND, AIR-AIR	100.0 HZ	NONE
5*	5	143.9000	148.1500	CAP REPEATER PRI	100.0 HZ	NONE
	6	143.9000	148.1500	DSM/DBQ REPEATER	127.3 HZ	NONE
	7	143.9000	148.1500	CID REPEATER	151.4 HZ	NONE
	8	143.9000	148.1500	BRL REPEATER	156.7 HZ	NONE
	9	143.9000	148.1500	ALO REPEATER	173.8 HZ	NONE
	10	143.9000	148.1500	DVN REPEATER	186.2 HZ	NONE
	11	148.1500	143.9000	PRI REPEATER (REV)	100.0 HZ	NONE
6*	12	143.7500	148.1250	CAP REPEATER SEC	100.0 HZ	NONE
OPTIONAL	13	149.8950	149.8950	CAP PACKET	NONE	NONE
OPTIONAL	14					
OPTIONAL	15					
OPTIONAL	16					

* Personal mobiles and all HT's WILL NOT be programmed with DECODE tones. All FM radios used on CAP frequencies should always transmit the 100 HZ tone except on packet frequencies. Personal radios may also program additional channels for narrow band FM voice which is also presently authorized.

+ FM radios in aircraft may use tone decoding if the tone decode goes away whenever the microphone is lifted off the hook. This eliminates listening to repeater outputs while monitoring channels 1 & 2.

NOTE: Units installing the Neutec memory expansion kits in their radios should contact the Wing Comm Officer for a full 256 Channel frequency listing for the Neutec radios. All Neutecs have the full memory expansion but without circuit modification, can only access the first 16 channels.

12. UNIT NET ACTIVITIES REPORTS. Each Wing/Unit NCS will submit a Net Controller's Log (Atch 2 showing the net schedule and the dates each net member checked in by the fifth working day of each month to the Wing Director of

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Communications. These reports will be used by the Wing Director of Communications to determine unit participation for IG inspections, document frequency use and unit training, to determine unit eligibility for awards, to document Corporate equipment usage, and to determine which units receive communications equipment. The goal is for a unit's net activity report to show weekly check-in to the Wing HF net and continuing unit VHF/26.62 net activity.

13. DAYLIGHT SAVINGS TIME. Net times listed in all schedules will be shifted to one UTC (ZULU) hour earlier during periods of Daylight Savings Time. The exception to this is the National Communicators Net on 7635.0 kHz.

14. AUXILIARY POWER. The term Auxiliary Power means locally generated 115 VAC power not connected to commercial power lines. All fixed stations should maintain auxiliary power capability. Each fixed HF station with Auxiliary (Emergency) Power capability will be run on that source during the first week of the month for at least one entire net. Battery powered equipment, including 12 VDC HF radios, will be run on batteries during at least the first week of each month. Emergency power use for communications will be entered into the fixed station or net controller's log and reported to the net controller. Battery power usage will be indicated by a capital "B" and auxiliary power usage by an "A" in the net controller's log in lieu of an "X" or check mark.

15. BACK-UP EQUIPMENT. Spare equipment is desirable and should be available and ready for immediate use. Units should include spare equipment use in their OI.

16. COMMUNICATIONS EXERCISES. The Wing will conduct at least one communications exercise per calendar year. Maximum participation from all units in the Wing is required. This requirement can also be met by participating in a North Central Region communications exercise. The Net Control Station Operator will document the exercise and forward the results to the IAWG/DC.

17. MESSAGE IDENTIFIERS. Messages originating from Wing staff or units requiring Wing wide distribution may have a message identifier assigned to them by the Wing NCS operator. The identifiers will use the format IA-## with the number starting with 1 yearly and continuing in sequence. Units may assign their own message identifiers in a similar manner for messages that go directly from one unit to another unit or person (e.g. EI-22 for East Iowa Cadet Squadron message 22). The NCS assigning the message numbers will maintain a log indicating when the numbers were assigned and the subject of the message.

18. OPERATIONS AND TRAINING NETS. As specified in CAP Regulation 100-1, Iowa Wing Nets are normally conducted as directed nets on a daily basis according to the schedule below and on an as needed basis utilizing frequencies and modes authorized in paragraph 8 and listed below. Unit OI's shall specify the schedule, frequencies and modes for the unit nets. The use of 26.62 MHz or VHF-FM frequencies on a non-interference basis is encouraged. Authorization to conduct a net is automatically approved upon filing a Net Controller Log with the Wing Director of Communications listing the net schedule, frequencies and identifying the Net Control Station. The Iowa Wing nets shall be conducted on frequency 4506 kHz in the SSB (USB) mode. The days and times are shown in Local Central Standard Time (CST) and Central Daylight Time (CDT) with associated ZULU (Z) time.

DAYS OF THE WEEK	CST (Local)	TIME (Z)	CDT (Local)	TIME (Z)
Monday through Saturday	2030 – 2100	0230 – 0300 (next day)	2030 – 2100	0130 – 0200 (next day)
Saturday and Sunday	0830 – 0930	1430 – 1530	0830 – 0930	1330 - 1430
Monday through Friday	0830 - 0900	1430 – 1500	0830 - 0900	1330 - 1400

19. COMMAND. This plan supersedes all previous OPERATIONS AND TRAINING PLANS issued by the Iowa Wing prior to this date. All units shall advise the Wing Communications Officer of factors that limit or prevent the execution of this plan as written. Implementation of this plan on a local level may be via the unit's OI. Requests to operate practice ELT transmitters and obtain an Iowa Wing Callsign shall be made on an Iowa Wing Form 100-1 (ATCH 1).

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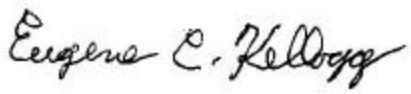
20. DEFINITIONS: The term MAY means the action is permitted. The term SHOULD means the action is suggested and recommended. The terms SHALL or WILL mean that the action is required and mandatory.

FOR THE COMMANDER



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